BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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| Order Instituting Rulemaking to Implement 2-1-1 Dialing in California. | R.02-01-025 (Filed January 23, 2002) |

# 2-1-1 DIALING WORKSHOP REPORT

Submitted in Compliance with Scoping Memo and Ruling of
Assigned Commissioner and Administrative Law Judge
Issued on April 30, 2002

**CALIFORNIA PUBLIC UTILITIES COMMISSION**
**TELECOMMUNICATIONS DIVISION**

Respectfully submitted
August 20, 2002

Jack Leutza, Director
Telecommunications Division
505 Van Ness Avenue, 3rd Floor
San Francisco, CA 94102

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CALIFORNIA PUBLIC UTILITIES COMMISSION
TELECOMMUNICATIONS DIVISION

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**Prepared by Telecommunications Division:**

Robert Benjamin
Karen Watts-Zagha

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Table of Contents

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## EXECUTIVE SUMMARY

The national abbreviated dialing code for access to health and human services information and referral is 2-1-1. The 2-1-1 dialing code makes a connection between individuals and families in need and the appropriate community based organizations and government agencies. 2-1-1 makes it possible for people in need to navigate a complex and ever-growing maze of human services agencies and programs.

On July 21, 2000, the Federal Communications Commissions (FCC) assigned the 2-1-1 abbreviated dialing code for access to community information and referral services. The FCC found that "a public need exists for an easy to use, easy to remember N11 code to efficiently bring community information and referral services to those who need them, providing a national safety network for persons to get access readily to assistance." The FCC recognized that "designation of a uniform national code would simplify access to information . . . and would make such information readily available to new members of communities as well as existing local citizens."

As part of the proceeding to implement 2-1-1 in California, the California Public Utilities Commission (CPUC or Commission) conducted a workshop on 2-1-1 dialing on May 29 and 30, 2002. This workshop addressed the technical changes telephone companies must make, and how to effect those changes, in order to introduce 2-1-1 in the state. Currently, a telephone user can dial either a 7-digit local number or an 8YY[1] number to reach a county-based Information & Referral provider. When 2-1-1 is implemented, instead of a phone user dialing a 7- or 10-digit number, the user will dial 2-1-1 and the originating phone company's switch will translate the 2-1-1 digits to the appropriate 7- or 10-digit number, known as the "point to" number. The local or long distance company that transports the call through the network will also need to know where to send the call.

[1] The term "8YY" refers to the group of area codes that the FCC has designated for carriers to use to provide calling for which toll charges are billed to the called party. Until recent years, only area code "800" was used for this purpose. Now area codes 888 and 877 are also authorized for this purpose.

Workshop participants discussed three network architecture proposals presented by the California Alliance of Information and Referral Services (CAIRS). The main issues were the number(s) 2-1-1 calls will "point to" and where 2-1-1 calls will terminate. They also discussed questions covering the timeline for implementation, tariffs, cost recovery, and the need for regulatory mandates.

Key findings and recommendations from the workshop include:

1. Each Information & Referral (I&R) provider should serve the area of an entire county. County I&R providers should be allowed to form consortia of counties to serve multiple counties when they can better serve the public by doing so.
2. A network architecture for 2-1-1 dialing that points all 2-1-1 calls to a single 8YY number for the state appears to be simpler and faster to implement than an option that uses variable routing; i.e. a combination of local routing and 8YY routing. Because it is unclear which architecture would cost more in the long term, the CPUC should not mandate either routing option but should leave both options available for the I&R providers and the carriers to negotiate and choose among.
3. Regardless of the routing option, calls may terminate at either a county I&R provider or a Regional Technical Center (RTC) maintained by a group of county I&R providers. The RTC would then complete the routing to the county I&R provider. It is not clear how routing first to an RTC and then re-routing to a county I&R provider could improve upon directly routing to a county I&R provider. However, an RTC will also perform special functions such as Interactive Voice Response (IVR), time of day routing, and disaster recovery that would otherwise be performed by a carrier. CAIRS believes in some cases it may be more cost effective to route to an RTC. Again, because cost information is not available, the CPUC should not foreclose either option but should leave both options available for the I&R providers and the carriers to negotiate and choose among.

4. If 2-1-1 service is to be universally available from all phones in California, each Incumbent Local Exchange Company (ILEC) and Competitive Local Exchange Company (CLEC) must perform 2-1-1 switch translations in order to originate 2-1-1 calls. If the CPUC does not mandate 2-1-1 origination service for all LECs[2] and payphones, the decision of whether to offer 2-1-1 service will ultimately be left to the carriers.
5. The CPUC should allow all LECs to recover their costs for 2-1-1 switch translation by either tariffs or individual contracts. LECs should provide underlying cost data to CPUC staff for either cost recovery method.
6. I&R providers should work with carriers to implement 2-1-1 dialing as expeditiously as possible, but the CPUC should not set deadlines for 2-1-1 implementation other than the pre-existing regulatory deadlines. I&R providers throughout the state are in various stages of readiness and plan to implement 2-1-1 dialing at different times. In order to monitor progress, the CPUC should require periodic status reports from the parties and establish milestones for implementation.

   The major steps toward 2-1-1 implementation are:

   1) CPUC approves I&R providers,
   2) If network architecture has been specified in this proceeding, LECs issue tariffs or sign contracts for 2-1-1 switch translation,
   3) If network architecture has not been specified in this proceeding, I&R providers, in consultation with carriers, choose a network architecture and negotiate contracts or purchase service elements at tariffed rates,
   4) Carriers perform 2-1-1 switch translations,
   5) I&R provider conducts education campaign.
7. The CPUC should immediately order payphone providers to desist from utilizing 2-1-1 as the number for customers to call for refunds.

[2] We use "LEC" to mean either an ILEC or a CLEC.

# INTRODUCTION

The CPUC's Telecommunications Division (TD) staff conducted a technical workshop on 2-1-1 dialing on May 29 and 30, 2002, in compliance with the Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge dated April 30, 2002 (Scoping Memo). The workshop participants included Incumbent Local Exchange Carrier (ILEC) and Competitive Local Exchange Carrier (CLEC) representatives, leaders of the California Alliance of Information and Referral Services (CAIRS) and the California 2-1-1 Statewide Steering Committee, staff of Infoline of Los Angeles, as well as CPUC staff from the Office of Ratepayer Advocates.[3]

As directed in the Scoping Memo, workshop participants addressed questions primarily about the telephone companies' role and responsibility in 2-1-1 dialing, as well as the need for regulatory mandates.

The network architecture chosen for 2-1-1 service will heavily influence the costs, timeline for implementation, and level of complexity of the service implementation. It will also dictate how many customers will negotiate and contract with the many LECs in California.

## The Technical Challenge of Implementing 2-1-1 Dialing

When a telephone user dials 2-1-1, the LEC's switch to which that telephone is connected must know where to send the call. This process performed by the original switch is generically called "call routing". In this proceeding, this process has acquired the name "2-1-1 origination".

Telephone systems that use the North American Numbering Plan, which includes California, route calls either using 7-digit telephone numbers or using 10-digit numbers (so-called "1-plus-10-digit dialing", or "1 plus area code and number"). Since every 7-digit telephone number within the NANP belongs to an area code and corresponds to a

[3] A complete list of participants can be found in Appendix 1.

specific 10-digit number, we will refer to the more general case of 10-digit dialing in this discussion.

The switch translation and routing problem in handling calls to an abbreviated dialing code such as 2-1-1 requires the LEC's switch to determine to which 10-digit number the call should be routed when a telephone user dials 2-1-1, (i.e., to translate 2-1-1 to the 10-digit number of the intended call recipient). Carriers referred to this 10-digit number as the "point to" number. The answer to this problem depends partly on how many I&R providers the state will have, which we address in"The Scoping Memo's Thirteen Questions", question 4, and partly on network architecture considerations, which we address both in succeeding paragraphs in this section and in question 7. Regardless of these considerations, for I&R providers to be accessible from any phone via dialing 2-1-1, all LECs in the state would need to reprogram each of their switches and all payphone owners would need to reprogram all of their payphones to translate 2-1-1 to the appropriate "point to" number that will route the calls toward the I&R provider.

## Network Architecture Options to Implement 2-1-1 Dialing

During the workshop, CAIRS described two documents, both entitled "California 2-1-1 Preliminary Network Architecture and Cost Analysis", which CAIRS had filed as attachments to its April 9, 2002 "Motion to Include Preliminary Network Architecture Proposals in the Record" (the April 9 Motion). These documents describe CAIRS's view of two possible network architectures for implementing 2-1-1 dialing. During the workshop, CAIRS identified a variant of its original two network architecture proposals as a third alternative network architecture. At the request of TD staff during the workshop, CAIRS provided a written summary on June 26 to help clarify its three network architecture proposals. That document is attached as Appendix 2 to this workshop report. Appendix 2 describes CAIRS's three proposed network architectures in summary terms and, like CAIRS's April 9 Motion, does not include details such as what type of carrier (LEC or long distance carrier) would handle the different portions of the

calls, and the handoffs of the calls back and forth between LEC and long distance carrier. The following description seeks to add that level of detail to the discussion.

As TD staff sees it, there are two primary dimensions to the three network alternatives that CAIRS presented in its June 26 summary. The first of these dimensions is the method by which the originating switch will route 2-1-1 calls toward their destinations. CAIRS presented two ways the originating switch could route calls: (a) using an 8YY number for all calls, or (b) using variable routing, wherein the call would be routed via LECs using 10-digit routing if the call is a local call, and via a long distance carrier using an 8YY number if the call would be a toll call. We refer to these two routing options as "All 8YY Routing" and "Variable Routing".

The second dimension is the type of entity to which the terminating switch will deliver the 2-1-1 calls. In CAIRS's network architectures, 2-1-1 calls would be delivered to one of two types of entities: (a) to the county I&R provider for each county, or (b) to a Regional Technical Center (RTC) for a group of counties (or for a single county). According to CAIRS, the RTC is effectively an intelligent Private Branch Exchange (PBX). We refer to these two routing destinations as "routing to county I&R" and "routing to RTC".

Combining these two dimensions yields the following four alternative network architectures: (1) all 8YY routing to the county I&R provider, (2) all 8YY routing to an RTC, (3) variable routing to an RTC, and (4) variable routing to the county I&R provider. The first three of these are the architectures proposed and discussed during the workshop. We describe and evaluate these architectures below, and in "The Scoping Memo's 13 Questions".

Option 1: All 8YY Routing to County I&R

The document identified in the April 9 Motion as "Exhibit B" outlines the network architecture alternative that CAIRS identified as "Carrier Solution". From discussion at the workshop and Appendix 2, the following description of this alternative emerges.

Each LEC's switch that originates a 2-1-1 call would translate 2-1-1 to an 8YY number and route the call to the switch of the long distance carrier that provides the 8YY

service to the I&R provider for the county in which the call originated. This long distance carrier (presumably the carrier referred to in the name "Carrier Solution") would route the call based on its county of origin to the appropriate I&R provider designated to provide 2-1-1 service within that particular county. The I&R provider would contract with the long distance carrier to transport these calls to that carrier's switch nearest the premises of the appropriate I&R provider. While Appendix 2 does not describe terminating the calls, presumably the long distance carrier would hand off the call to the LEC that serves the I&R provider, and that LEC would carry the call the "last mile" to the I&R provider's premises, i.e., "terminate" the call.

Option 2: All 8YY Routing to RTC

The document identified in the April 9 Motion as "Exhibit A" describes the network architecture alternative that CAIRS identified as "RTC". In the document attached hereto as Appendix 2, CAIRS titles this alternative "RTC Solution (8YY)". From discussion at the workshop and Appendix 2, the following description of this alternative emerges.

CAIRS would divide the state of California into 10 regions, each served by its own RTC[4]. Each LEC's switch that originates a 2-1-1 call would translate 2-1-1 to an 8YY number and route the call to the switch of the long distance carrier that provides the 8YY service to the I&R provider for the county in which the call originated. This long distance carrier would route the call based on its county of origin to the appropriate RTC designated to provide 2-1-1 service within that particular region, and would transport the call to its switch nearest the premises of that RTC. While neither Exhibit A nor Appendix 2 describes terminating the calls, presumably the long distance carrier would hand off the call to the LEC that serves the RTC, and that LEC would terminate the call. Then, for the part of the call route that CAIRS's Exhibit A (p.15) shows as "The RTC automatically reroutes the call to the caller's I&R", the RTC would initiate a second call, based on the county of origin of the original call, to the 10-digit number of the appropriate I&R provider designated to provide 2-1-1 service within that particular county.

The routing of this second call would be as follows: if this call will cross LATA boundaries, the LEC's switch that serves the RTC will route the call to the switch of the long distance carrier chosen by the RTC. This long distance carrier will route the call to the switch of the LEC that serves the county I&R provider, and that LEC would terminate the call. If this second call will not cross LATA boundaries, the LEC's switch that serves the RTC will route the call to the switch of the LEC that serves the county I&R provider, without handing off the call to a long distance carrier, and the county I&R provider's LEC will terminate the call.

CAIRS stated at the workshop that it is likely that not all counties would choose an RTC solution, but rather that some of the most urban and populous counties might choose to use an RTC while other counties would have the 2-1-1 calls routed directly to the county I&R provider. CAIRS also stated that, because of the large population of Los Angeles (L.A.) County, the L.A. County RTC would handle only calls from L.A. County rather than handling calls from several contiguous counties, as CAIRS's written proposal suggests would be the case.

Option 3: Variable Routing to RTC

CAIRS's April 9 Motion did not include a third alternative network architecture, but CAIRS suggested and discussed a third alternative at the workshop. In the document attached hereto as Appendix 2, CAIRS titles this third alternative "RTC Solution (8YY and 7 or 1+10 digit solution)". From discussion at the workshop and Appendix 2, the following description of this alternative emerges.

The difference between this alternative and "All 8YY Routing to RTC" is that in this alternative, each LEC switch would determine (based on the rate center of the caller, the county of origin of the 2-1-1 call, and the location of the RTC of the I&R provider for that county) whether the call could be completed as a local call and, if so, route the call directly to the LEC serving the county I&R provider's RTC, without handing off the call to a long distance carrier. If the call could not be completed as a local call, the LEC's switch that originated the call would route the call to the switch of the long distance carrier that provides the 8YY service to the I&R provider for the county in which the call

[4] The RTC is effectively an intelligent PBX.

originated, and the call would proceed just as it would in "All 8YY Routing to RTC". In this alternative, there would be no standard "point to" number to which all LEC switches would translate 2-1-1 calls, but rather a different set of translations for each LEC switch, depending on the appropriate RTC for the caller's county of origin, and on the distance from the rate center of the caller to the rate center of that RTC.

CAIRS's description of this third alternative in Appendix 2 does not state whether it would also want the second call (pictured on p. 15 of CAIRS's Exhibit A), from the RTC to the caller's county I&R provider, to be "variably routed", i.e., routed via an LEC if the call would be local, and routed via a long distance carrier if this leg of the call would be a toll call. Presumably, the RTCs could themselves accomplish the variable routing of this second call, with sufficient programming.

Option 4: Variable Routing to County I&R

No party proposed this network alternative, and staff makes no claim that it is a viable alternative. TD staff includes this fourth option only to try to clarify the dimensions of the problem and the nomenclature of potential solutions.

In this alternative, each LEC switch would determine (based on the rate center of the caller, the county of origin of the 2-1-1 call, and the location of the I&R provider for that county) whether the call could be completed as a local call and, if so, route the call directly to the LEC serving the county I&R provider, without handing off the call to a long distance carrier. If the call could not be completed as a local call, the LEC switch that originated the call would route the call to the switch of the long distance carrier that provides the 8YY service to the I&R provider for the county in which the call originated, and the call would proceed just as it would in "all 8YY routing to county I&R". In this alternative, there would be no standard "point to" number to which all LEC switches would translate 2-1-1 calls, but rather a different set of translations for each LEC switch, depending on the appropriate county I&R for the caller's county of origin, and on the distance from the rate center of the caller to the rate center of that county I&R.

## Discussion

### Pros and Cons: Routing to RTC Vs. Routing to County I&R

TD staff suggests that the call re-routing function of the RTC be distinguished from the "value-added features" of the RTC. The RTC in the only county that apparently currently has an RTC (Los Angeles County) will not be doing any portion of the selective routing of 2-1-1 calls to the correct county since it serves only one county, according to statements by CAIRS at the workshop. With this in mind, the following list of some of the characteristics of the RTC option may be helpful.

1. The RTC is a device that adds features (e.g., interactive voice response, emergency re-routing, statistical reporting capabilities) that its owners might otherwise purchase from a carrier and pay for on an ongoing basis. Thus some recurring costs may be lower with the RTC solution than with routing to the county I&R.
2. An RTC that serves only a single county would perform no call routing: it would perform the value-added features listed above and then send the call to its own call center. In some sense this would not be a Regional Technical Center, since it would serve a single county rather than a region.
3. A multi-county RTC would receive calls from all of its counties, perform the value-added features, and then reroute the calls to the correct county I&R provider.
4. Much of the programming needed to identify the caller's county from the caller's NPA-NXX may have to be contained both in the originating LEC switch (under variable routing) or long distance carrier switch (under all 8YY routing), and also in the RTC's PBX itself in order for the RTC to be able to reroute a call to the correct county I&R provider. If the PBX indeed needs this programming, this might add significantly to the cost of the multi-county RTC option.
5. The RTC option requires higher upfront costs to purchase the PBX, compared to routing to the county I&R.

6. An RTC solution will require coordination and cooperation among county I&R providers, to establish and maintain their RTC.
7. The county I&R routing solution makes available the ability to reroute a customer's call from the comprehensive I&R provider to a specialized I&R provider with a 3-digit code. The RTC solution would not allow for this "extra".
8. The calls that a multi-county RTC reroutes to another county I&R provider will usually incur two toll charges; one for the incoming call, and another for the outgoing call the RTC initiates to the correct county I&R provider. This will tend to increase the ongoing costs of the RTC solution relative to the costs of routing directly to the county I&R.

Since no specific cost information on these issues was presented at the workshop, we can only say that it seems plausible, though not certain, that some I&R provider groups can perform the programming and maintenance work necessary for the value-added functions more cost-effectively than they could buy these services from an LEC, and that this may outweigh the RTC's tendency to increase toll charges. CAIRS stated that it is easier to procure funds for upfront costs than it is to procure funds for ongoing costs.

CAIRS wishes to preserve both the RTC and the county I&R routing options because different solutions may be more cost-effective in different geographic areas. CAIRS indicated that where RTCs currently operate, for example in Los Angeles County, the I&R providers would likely wish to continue using the RTC. CAIRS described Los Angeles as unique in terms of population, call volume, and I&R resources, compared to other parts of the state. It appears that urban density will have a major impact on whether an RTC is cost-effective.

Carriers did not express a strong preference for either the routing to RTC or routing to county I&R solution (although AT&T Local expressed a mild preference for the RTC solution, chiefly because it could reduce the number of "point to" numbers required, if a single 8YY number were not used statewide).

Pros and Cons: All 8YY Routing Vs. Variable Routing

CAIRS is interested in preserving the variable routing solution because of its belief it would lower its costs. (see discussion under Scoping Memo Questions, Question 7). Because no specific costs were presented, it is not possible to determine if an all 8YY solution will be less cost-effective than a variable routing solution.

During the workshop, carriers objected to variable routing and universally preferred all calls be routed to an 8YY number. Variable routing increases the complexity of programming switches and routing calls. The all 8YY solution, with routing to either an RTC or county I&R , will likely expedite implementation of 2-1-1 dialing. 8YY service is an existing, established service and provides a standard method for carriers to program switch translations and route calls.

The strongest objection to the variable routing option came from the CLECs. Treating 2-1-1 calls as local calls will require the originating and terminating carriers to engage in reciprocal compensation, which is disliked by the CLECs. Carriers prefer the 8YY option because one party, the I&R providers, will pay all costs of the call.

All 8YY routing has a few additional advantages. Some payphones would allow callers to dial 2-1-1 calls from payphones without depositing coins if all 8YY routing were used. Uniformity of the "point to" number will allow for disaster recovery contingencies and custom statistical reporting. Finally, some switches have system limits on the total number of "point to" numbers that can be programmed per switch. For those carriers with few switches, adding another "point to" number for the 10-digit option will eat into their allotment of "point to" numbers per switch. Furthermore, all 8YY routing may eliminate the need to establish a new service for 2-1-1 dialing and therefore eliminate the need for new service applications and a lengthy tariff approval process. If 8YY is the solution chosen, that portion of the service can be provided through the existing tariffs, which would expedite the implementation of 2-1-1.

One other point about "all 8YY routing" vs. "variable routing" was discussed at the workshop. Several carriers stated that they believe the I&R providers will have more power to negotiate the lowest possible rate for 8YY service if they all band together and negotiate as one group to purchase one very large bundle of 8YY minutes to meet their combined statewide needs, rather than having each county I&R provider negotiate a

separate deal with possibly different long distance carriers. While Los Angeles County is clearly a large enough purchaser to negotiate a favorable rate for its 8YY service even on its own, most of the other 57 counties in the state will be at a severe disadvantage if they have to negotiate separately for their purchase of comparatively tiny amounts of 8YY minutes. Group master contracts to which the group's members can opt in at their discretion are a familiar and valid option under the CPUC's express contract rules, and presumably also under rules for regular contracts. This is an option that the Los Angeles County I&R might wish to consider as a way of sharing its expertise and purchasing power with the I&R providers in the other 57 counties.

## The Scoping Memo's 13 Questions

The joint reply comments of AT&T, WorldCom and XO to OIR 02-01-025 detailed a set of issues for I&R providers, and a separate set of issues for the utilities. The Scoping Memo repeated the 16 questions posed by these joint commenters, and directed the workshop to seek answers to questions 4, 6, and 7-16 of the joint commenters, and to an additional question of its own. The following section summarizes the views on these questions expressed by the parties during the workshop, and TD staff's opinions. We have kept the numbering of the questions used in the Scoping Memo, but have organized them according to subject matter.

<u>Network Architecture and Service Mandates; 2-1-1 Origination</u>

> *How should the area to be served by each I&R provider be defined? What should be the minimum permissible service area? (Question 4)*
>
> *Moreover, it is also unclear whether we will need a single provider serving the entire state, or whether the service and network architecture support provision through a number of regional providers. (Scoping Memo, p.9, ¶1)*

CAIRS believes that, in most cases, the CPUC should designate county boundaries as the geographic area served by a single comprehensive I&R provider. Most

specialized I&R providers are already organized along county lines, as well as the agencies to which I&R providers make referrals. Also, since I&R providers generally collaborate with regional and national organizations, it would make sense to keep the area of service for California I&R providers the same as the area of service of the regional and national organizations. There are 58 counties in California.

CAIRS believes there may be counties in California (citing specifically San Bernardino County, the nation's largest county) where it is appropriate to have more than one I&R provider per county. It is also possible that two or more counties could associate together to provide information and referral services. The bottom line is that each comprehensive I&R provider will serve a clearly defined geographic area that does not overlap with any other comprehensive I&R provider's geographic area.

Regarding the question of whether a single I&R provider should serve the entire state, no parties at the workshop voiced support for this idea. Based on discussion at the workshop, at least some of the network architectures proposed (especially those using all 8YY routing) will support provision of I&R service via 2-1-1 dialing through as many as 58 regional (i.e., county) providers. There appear to be no network architecture reasons that would dictate using a single I&R provider serving the entire state. Furthermore, CAIRS stated that a single I&R provider for a state as large as California would be quite unwieldy and chaotic for the I&R providers.

Carriers accepted the county as the dividing line. They were concerned that the smaller the areas covered by each comprehensive I&R provider, the more customers with which they will have to negotiate individual contracts. Carriers also asked for clarity on the process for ensuring they negotiate with authorized I&R providers. The CPUC will authorize the I&R provider in a process yet to be determined, but tentatively outlined earlier in this proceeding[5].

The service area will affect call routing as well. In general, carriers will route calls to the appropriate comprehensive county I&R provider based on the area code and prefix (NPA-NXX) of the calling party. All parties acknowledged that NPA-NXX are organized by rate center, and rate centers do not necessarily match county boundaries. CAIRS indicated that it accepts that some calls will be misrouted because of this problem. When

[5] See Appendix A of the January 23, 2002 Order Instituting Rulemaking.

this occurs, the comprehensive I&R provider will manually reroute the call. For example, the State Department of Aging currently receives calls from all over the state and routes the calls to a county-specific senior line. CAIRS states that the Department of Aging does this with a 98% accuracy rate.

There was no suggestion set forth as to the minimum permissible service area, but the inference of comments was that each I&R should serve at least a large fraction of the area of a county.

*What should be the operational standards (i.e., switch translation and routing) for end-user access to I&R providers via 2-1-1 dialing ("2-1-1 origination service")? (Question 7)*

For any of the network architectures discussed previously, every LEC would have to program each of its switches and every payphone provider would have to program each of its payphones in California with the appropriate translation tables in order for 2-1-1 to connect an end-user from nearly every phone[6] in California to the appropriate I&R provider. The differences between "All 8YY Routing" and "Variable Routing" are explained earlier in the Network Architecture section. A variant of the "All 8YY Routing is an intermediate solution in which CAIRS specifies a small number of different 8YY numbers to which 2-1-1 calls should be routed, if the different county I&R organizations are unable to agree on (or choose not to select) a single long distance provider to serve all the state's county I&R providers, or if having multiple 8YY numbers would facilitate allocating the bill for the 8YY service among a multitude of independent county I&R providers.

During the workshop discussion of this question, CAIRS's telecommunication consultant stated simply that the 2-1-1 dialed by an end-user should be translated to a "point to" number, and after that the call should be routed in standard public switched telephone network fashion to that number.

Representatives of all carrier types at the workshop (ILEC, CLEC, IEC) expressed their preference for a network architecture in which 2-1-1 calls are translated

[6] Calls from phones in hotels, motels, and hospitals are a special case, which were not discussed at the workshop.

and routed to an 8YY number; several carriers stated that the fewer the "point to" numbers used, the simpler and better they can implement this. AT&T Local stated that some of its California switches are a type that has a strictly limited capacity for translations, and that an architecture that requires LEC switches to point 2-1-1 calls to numerous different numbers would hasten the day when it has exhausted its switches' translation capacity, and would increase its costs of implementing 2-1-1.

CAIRS made the point that many calls that people dial today to I&R providers are local calls and are free to the caller as well as to the I&R provider. CAIRS expressed concern that a routing solution that routes all calls to an 8YY number could cost them much more by virtue of having to pay toll charges on calls that were previously free. This was the impetus for the third alternative introduced at the workshop, "Variable Routing to RTC"[7]. Verizon pointed out that if CAIRS chooses this alternative, they would negate some of the reasons for sending all calls to the 8YY number; that CAIRS would save some money on transport charges but would lose some features, such as the ability to redirect calls using 3-digit redirection, the ability to do disaster recovery rerouting, statistical reports. For many of these features to work, apparently all the information (and therefore all the calls) would have to come in to a common point.

*What costs will local exchange carriers incur to provide their end-users access to I&R providers via 2-1-1 dialing? What is the appropriate cost recovery mechanism? (Question 8)*

In order to provide their end-users access to I&R providers via 2-1-1 dialing, local exchange carriers will incur the costs of programming switch translations. As described in the Network Architecture section, each switch must be programmed to translate 2-1-1 to a "point to" number. The costs of these translations will depend on the complexity of the translations. The complexity is at least partially determined by the quantity of "point to" numbers, and whether the "point to" number is simply an 8YY number or the "point to" numbers are a combination of an 8YY number and 7-or 10-digit local numbers.

[7] CAIRS called this "RTC Solution (8YY and 7 or 1+10 digit solution)"

Verizon specified costs for translations as: 1) pre-sale costs (labor to gather requirements), 2) switch translation costs (depends on number of host switches, not remote switches, to be translated), 3) billing costs, 4) service entry costs, and 5) post-sale costs (provisioning and testing the service).

Carriers expressed a preference for a single 8YY "point to" number statewide, presumably because this is the simplest and most cost effective solution for them. Carriers' costs will increase with additional "point to" numbers. The most complex and costly solution is likely the solution that requires a combination of an 8YY number and 7- or 10-digit local numbers.

Since CAIRS has stated that 2-1-1 should be implemented at no cost to carriers, CAIRS will need to reimburse carriers for the switch translation costs. CAIRS reported that Pacific Bell will not make 2-1-1 service a profit center, and therefore will only seek recovery of actual costs. For ILECs, reimbursement could occur either through a tariff or individual contracts. Since CLEC rates are not set by the CPUC, CLECs may choose to recover costs however they wish.

*Should all local exchange carriers be required to provide 2-1-1 origination service? Should local exhange carriers be required to tariff 2-1-1 origination service? (Question 10)*

If 2-1-1 service is to be universally available, each carrier that provides voice service, whether ILEC or CLEC, must make the appropriate translations in each of its switches. In the absence of a regulatory mandate, the decision would be left to each LEC whether to offer 2-1-1 origination. CAIRS expressed an urgent interest in implementing 2-1-1 service and presumably CAIRS and/or I&R providers would approach LECs to try and reach an agreement for 2-1-1 origination. CAIRS and/or I&R providers would decide which LECs to approach. On the other hand, it is possible that LECs would independently decide to offer 2-1-1 origination so that their customers could dial 2-1-1 and reach an I&R provider.

The CPUC may decide to try and effect universal 2-1-1 access by mandating 2-1-1 origination. TD staff agrees with the parties in this proceeding that carriers should not bear the cost of 2-1-1 origination and that carriers should be allowed to charge

CAIRS and/or I&R providers for 2-1-1 origination through a tariff or contract. As described in the answer to Question 8 above, the type of network architecture chosen impacts the costs of 2-1-1 origination. CAIRS and/or I&R providers should consider a network architecture that is simple and cost effective for all carriers to implement.

If the CPUC does mandate that all LECs offer 2-1-1 origination, it should clarify that LECs serving only data customers are exempt from this mandate, because it would make no sense for a data LEC to offer 2-1-1 orgination. The CPUC may also wish to sunset this mandate in order to ensure down the road that the mandate is only renewed if it is still relevant.

The ILECs indicate a willingness to originate 2-1-1 calls. Several CLECs indicate a willingness to originate 2-1-1 calls but urge the CPUC not to mandate 2-1-1 origination.[8] These CLECs object to a mandate on the basis that ILECs could make it prohibitively expensive for CLECs to originate 2-1-1 calls. AT&T Local also stated that mandating what services CLECs offer runs counter to the "regulatory compact" underlying competitive markets.

In contrast, the chair of the 2-1-1 Steering Committee emphasized that 2-1-1 is an essential service to reach people in need and should not be left to the whims of the market. While CAIRS would ideally like to make 2-1-1 service universally available and hopes it will be included in the definition of basic service eventually, they are not asking for it at this time. On the other hand, CAIRS's counsel said at the workshop that "We're not looking for a CPUC decision that says that all carriers shall provide 2-1-1 origination service. We think there's an FCC ruling that does that."

CCTA believes mandating 2-1-1 origination would change the definition of basic service and doubts this proceeding is the appropriate forum in which to change the definition of basic service.

With regard to the issue of tariffing, if a carrier offers N11 service, this service offering must be included in its tariff. Prices may not necessarily be included in the tariff, but there must be a sentence specifying that 2-1-1 service is accessible from all switches.

All carriers should have a means of cost recovery available to them. Tariffs are only one method of cost recovery and are appropriate for ILECs to file, in order to allow

[8] AT&T Local and Cox expressed this sentiment.

for CPUC review of ILEC prices. However, not all carriers should be required to tariff this service. CLECs have wide discretion as to how to recover costs, and a tariff requirement should not be imposed upon them.

TURN and ORA did not address the issue of tariffing during the workshop, but they took a position on this in the prehearing conference prior to the workshop. TURN and ORA specifically supported AT&T's request that Pacific "serve its technical 2-1-1 provisioning proposal and proposed tariff upon all parties prior to the date of the workshop . . ."[9] ORA and TURN also opposed a "stand alone advice letter outside of this proceeding."[10] On the other hand, ORA and TURN did not at that time request evidentiary hearings on cost issues nor did they request recategorization of this proceeding as ratesetting.

Verizon's position on the need to tariff is that one customer, as may be the case for the I&R providers, does not necessitate a tariff. Verizon did not address the fact that the entity that purchases 2-1-1 origination from Verizon in each county may be a different I&R provider, so there may indeed be several different customers purchasing 2-1-1 origination from Verizon.

*What entity should control the database information required by LECs to implement access to I&R providers via 2-1-1 dialing? (Question 9)*

It seems unlikely that 2-1-1 dialing will require creation of a database, since each carrier that originates 2-1-1 calls will program its own switches with the appropriate "point to" numbers. However, should a database become necessary, AT&T Local would like to preserve nondiscriminatory access to the information stored in such a database. SBC/Pacific Bell was reluctant to grant carte blanche access to a database for which they may do the creative work.

Should 2-1-1 dialing require a database, CAIRS offered to create and maintain the database and to grant nondiscriminatory access to the database.

TD staff believes it is premature to decide on access to a database since there is no clear need for a database at this time.

[9] ORA and TURN, Reply Comments, p. 1.

*Is the provision of 2-1-1 a new telecommunications service or simply a repackaging of existing services? (Scoping Memo, p.9, ¶ 2)*

Carriers stated their opposition to applying for 2-1-1 as a new telecommunications service. Carriers see 2-1-1 dialing as a repackaging of existing services. Switch translation in itself is not a new service, although use of the 2-1-1 number will be new. Whether 2-1-1 service is considered new or a repackaging of existing services, costs and prices will undergo review by TD staff. If 2-1-1 service is tariffed, the tariff, even if composed of established costs and prices, will undergo review. If 2-1-1 service is provided under contract, it will also receive a review. TD staff believes 2-1-1 service will likely be composed of parts of existing services.

Timetable

*What procedures are appropriate to resolve non-conforming use of the 2-1-1 abbreviated dialing code? (Question 13)*

Participants noted that 2-1-1 is currently used by some payphone providers for refund purposes, pursuant to a CPUC decision in the early 1990s. A formal notice, ideally as part of this proceeding, should be sent to payphone providers alerting them to stop using the 2-1-1 code for refund purposes. Cox Communications noted that the wireless industry has petitioned the FCC to use 2-1-1 for wireless information.

TD staff recommends that the CPUC monitor the wireless petition before the FCC to use 2-1-1 for an alternate use, but proceed toward implementation of 2-1-1 by wireline carriers for I&R purposes. TD staff also recommends that, after appropriate notice and comment, the CPUC order payphone providers to desist from using the 2-1-1 dialing code for refund purposes, to conform with the federal mandate that 2-1-1 is reserved for I&R service provision.

[10] Ibid., p. 2.

*What is the appropriate timetable for implementing I&R provider service via 2-1-1 dialing? (Question 6)*

*What is the appropriate timetable for local exchange carriers to implement 2-1-1 origination service? (Question 11)*

The CPUC should not set a timeline for 2-1-1 origination other than the pre-existing regulatory deadlines. CAIRS indicated that it is unlikely 2-1-1 service will have a simultaneous statewide rollout. Rather, individual I&R providers will establish their own timelines for 2-1-1 service rollout. Since individual I&R providers will drive 2-1-1 implementation, in the sense that they must make agreements with carriers for 2-1-1 origination, carriage and termination, it would be very difficult for the CPUC to set a timeline for the entire state.

However, the CPUC should actively monitor 2-1-1 implementation by requiring periodic status reports and establishing milestones for implementation. At the workshop, the parties reached consensus that milestones, not deadlines, were preferable. Parties explained that three distinct groups will be working together to implement 2-1-1 dialing: I&R providers, carriers and the CPUC. Since these groups will be dependent on each other to implement 2-1-1 dialing, one deadline may create friction if one group lags and delays the ability of another group to make the necessary preparations.

The Scoping Memo established regulatory deadlines. The decision on I&R provider issues is scheduled for September 5, 2002 and the final decision including technical issues is scheduled for November 21, 2002 (if hearings are not necessary) and no later than June 23, 2003 (if hearings are necessary).

The first step toward implementing 2-1-1 dialing is chosing I&R providers. This process can begin after the interim decision is issued in September. The remaining steps toward 2-1-1 implementation must be taken after the final decision is issued.

If the Commission does not order a specific network architecture as proposed by staff, the next step will be for the I&R providers to determine the network architecture for each I&R service territory, and communicate the decision to all California LECs and payphone providers. At this point carriers may, if required, apply for 2-1-1 as a new service, and file tariffs.

A third step will be for the I&R providers to contract with carriers for switch translation. At the same time, I&R providers may purchase local and long distance service for their call centers, whether RTCs or simply the comprehensive I&R provider's call center. Once switch translation work is accomplished, or perhaps simultaneously with switch translation, the I&R provider and/or CAIRS will conduct the education campaign.

Both CAIRS and the carriers were concerned that negotiating contracts will be a lengthy process. The use of tariffs, instead of contracts, would eliminate the lengthy contract negotiation process. However, in order for the carriers to create tariffs, CAIRS will need to submit a standard routing plan.

Network Architecture and Service Mandates; 2-1-1 Termination

> *What should be the operational standards (i.e., network design and routing) for termination of 2-1-1 calls with I&R providers ("2-1-1 termination service")? (Question 12)*

CAIRS representatives said at the workshop that they need to clarify their position before this question can be answered, so this question was not discussed directly, in order, at the workshop. However, in later addressing related questions number 14, 15, and 16, parties shed light on this question as well. An Ameritech representative stated that she did not see that termination of 2-1-1 calls is any different than termination of any other calls, and that if a county I&R provider buys local service from a LEC, the LEC should not care what type of calls are terminated on those local service lines. CAIRS's telecommunications consultant also later expressed agreement with this view.

TD staff agrees with this view of what 2-1-1 termination service means. Regardless of whether the CPUC or CAIRS chooses all 8YY routing to the county I&R[11], all 8YY routing to the RTC[12], or variable routing to the RTC[13], it is our understanding that 2-1-1 calls will be delivered to the I&R provider's premises by its chosen LEC and terminated on as many business lines as the I&R provider chooses to purchase and

[11] "Carrier Solution"
[12] "RTC Solution (8YY)"
[13] "RTC Solution (8YY and 7 or 1+10 digit solution)"

designate for this purpose. TD staff has no information that suggests that either POTS business lines, Centrex lines, ISDN lines, PBX trunks, or some other already tariffed form of access line would not be adequate to meet the needs of I&R providers to terminate 2-1-1 calls at the premises of their chosen call centers.

TD staff is not persuaded that there is a need to define a new class of call termination called 2-1-1 termination service. Existing and already tariffed forms of access lines appear adequate for terminating 2-1-1 calls, and the routing of calls onto these types of access lines is already well established and understood. Thus we see no need for new operational standards for such a service.

It seems likely that questions 12, and 14 through 16 were posed by the joint reply comments of AT&T et al. only due to a fear that the CPUC might mandate that all LECs tariff some sort of new call termination offering, somehow tailored to the wishes of I&R providers. So far we have not heard any such wishes that can not be met by already tariffed types of access lines.

*What costs will utilities incur to provide termination for 2-1-1 calls? What is the appropriate cost recovery mechanism? (Question 14)*

Referring to our discussion of question 12, TD staff believes the costs of terminating calls on these types of access lines are already well established.

CAIRS and/or the I&R providers will pay the costs of 2-1-1 call termination. The appropriate cost recovery mechanism for 2-1-1 call termination should include either tariffed rates or individual contracts, at the discretion of the I&R providers and the LECs from whom they choose to buy local service. CAIRS expressed a preference for tariffs, although it is not clear that that preference extends to this portion of the service, where tariffs are already in place.

*Should all local exchange carriers be required to provide 2-1-1 termination service? (Question 15)*

TD staff refers again to our discussion of question 12.

Several CLECs at the workshop stated that they do not intend to provide 2-1-1 call termination service, and prefer that the CPUC not mandate that all CLECs offer 2-1-1 termination service. On further elaboration, most CLECs seemed to be saying that they did not intend to offer a version of call termination tailored specifically to I&R providers, but that if an I&R provider wanted to buy business access lines from an existing CLEC tariff, they would be happy to sell such lines under tariffed rates and conditions. None of the ILECs present expressed any reluctance to sell access lines to I&R providers, and indeed their tariffs (like CLECs' tariffs on access lines) would require them to do so under normal circumstances.

The call termination portion of 2-1-1 service is a portion for which any particular I&R provider need only purchase service from one or a very small number of LECs, unlike the call origination portion of 2-1-1 service, in which all LECs in the state must reprogram each of their switches to translate 2-1-1 to a "point to" number in order for I&R providers to be ubiquitously accessible via 2-1-1. For call termination, the I&R provider needs only a single LEC that serves the area of its call center to provide local access lines to terminate the 2-1-1 calls. If an I&R provider chooses to have call centers in areas of the state that are not all served by a single LEC, that I&R provider will need to strike deals with more than one LEC to buy access lines for its different call centers. If I&R providers in some counties prefer to buy their access lines from a CLEC that has facilities available at the relevant location, at that CLEC's tariffed rates, that is the I&R provider's prerogative.

TD staff believes the CPUC need not establish additional requirements on LECs, beyond the language of existing tariffs for access lines.

*Should local exchange carriers be required to tariff 2-1-1 termination service? Should I&R providers be able to obtain 2-1-1 termination service under contract? (Question 16)*

Since most LECs already have tariffs offering standard access lines, TD staff recommends that the CPUC not mandate that LECs offer a tariff specifically for termination of calls that are dialed and routed as 2-1-1 calls. Likewise, we see no reason

to prohibit I&R providers from obtaining their access lines under contract if they prefer contracting over purchasing their access lines through LECs' tariffs.

## Additional Items

### 2-1-1 Education

An item brought up by Verizon, not among the questions posed in the Scoping Memo, is whether the Commission will mandate inclusion of information about 2-1-1 dialing in LECs' white page directories. Verizon stated that in some states Verizon operating companies have found that they have run out of space in their directories and cannot include additional information such as information about 2-1-1 dialing. Verizon indicated that it will be willing to work with the CAIRS and I&R providers on some information on 2-1-1 dialing to include in their directories, but prefer that the CPUC not mandate such inclusion, in case it encounters the situation of not having additional space to include such information in their directories.

### 2-1-1 Free to the Public

The workshop participants requested regulatory guidance on making 2-1-1 calls free to the general public. The FCC indicated support for N11 calls that could be made "at no additional cost to the caller." This in essence would mean 2-1-1 calls from residential phones would cost no more than a local call, whether through flat rate or measured service. Calls from a payphone would cost no more than a local call.

All three network architectures CAIRS proposed are designed to keep 2-1-1 calls the price of a local call. TD staff believes this standard should be upheld when 2-1-1 is implemented. In cases of calls from payphones, it may be worth exploring whether to eliminate the charge to the calling party altogether.

### 2-1-1 Calls From Payphones

Rates for calls placed from payphones differ from both calls placed from residential or business telephones, and also from one another, since payphone rates were

deregulated in 1997. Workshop participants discussed payphone rates but many questions were left unanswered. Verizon stated its intention to require a coin deposit for a 2-1-1 call and not to return the coins. Pacific Bell will not require a coin deposit for 2-1-1 calls if the "point to" number is an 8YY number. WorldCom said it currently does not require a coin deposit to dial 2-1-1 because the translation for 2-1-1 is accomplished in the payphone itself, therefore no additional charge is incurred. (Note that 2-1-1 is currently used for requesting payphone service refunds.) The chair of the 2-1-1 Steering Committee explained that clients calling from payphones may be among the most needy 2-1-1 clients. In fact, a payphone may be the only method for homeless people, victims of domestic violence, or simply poor clients to access I&R service providers.

Dialing 2-1-1 from payphones raises the same questions discussed above regarding call routing standards, cost recovery, and whether to mandate origination from all payphones. The network architecture eventually chosen should allow 2-1-1 calls to connect from payphones. No party in the workshop indicated that the three proposed architectures would not be compatible with payphone access, so we can assume any of the three architectures are viable, but they may result in different rates for calls from payphones to 2-1-1.

The switch translations for payphones will vary, depending upon the type of payphone. WorldCom's representative estimated that 90% of payphones are mini-PCs that can perform the translation in the payphone itself. For the remainder of payphones, the translation would presumably occur in the switch serving the payphone in question.

An outstanding question is whether to mandate 2-1-1 service origination from payphones. A mandate would eliminate the need for CAIRS and/or individual I&R providers to contact all payphone providers statewide. A mandate would also ensure that perhaps the most vulnerable clients have access to I&R providers.

Though the CPUC could mandate 2-1-1 origination from payphones, the CPUC has less influence over payphone rates. It is therefore in the interest of CAIRS and the I&R providers to establish a routing plan and negotiate a cost recovery mechanism for payphone owners that will minimize the charges for 2-1-1 calls from payphones.

## Summary

TD staff does not recommend the CPUC dictate the network architecture that CAIRS uses for the 2-1-1 service because cost information was not presented at the workshop. Based on the technical information presented, TD favors an 8YY routing solution because it appears to be the fastest and simplest to implement. CAIRS is reluctant to endorse an All 8YY solution because of its assumption it will be more costly. However, CAIRS should consider the purchasing power of all the I&R providers throughout the state seeking a single carrier for 8YY calls. This may resolve this concern. Likewise, CAIRS shold weigh the ease and speed of implementation that an 8YY solution has to offer against a more complex and lengthy process of individual I&R providers negotiating separate agreements throughout the state.

Despite TD staff's preference for an All 8YY solution, the CPUC should not dictate one or the other of these architectures. CAIRS has more complete information than the CPUC on its needs and calling patterns, as these evolve.

With regard to the choice of routing to an RTC or to a county I&R provider, TD cannot recommend a solution without cost information. From a network efficiency perspective, routing to a county I&R provider seems preferable to routing calls to a multi-county RTC, because of its tendency to accomplish with one call what the RTC solution will often turn into two calls incurring two toll charges.

# Appendix 1

Workshop Participants

Representatives of the following parties participated in the workshop.

1. AT&T Communications of California, Inc.
2. California 2-1-1 Statewide Steering Committee
3. California Alliance of Information & Referral Services
4. California Cable Television Association
5. Cox California Telcom, L.L.C. dba Cox Communications
6. Infoline of Los Angeles
7. Metro PCS
8. Northern California Council for the Community
9. Office of Ratepayer Advocates, California P.U.C.
10. Pacific Bell
11. Sierra Telephone Company Inc.
12. Small LECs (Calaveras Telephone Company,Cal-Ore Telephone Co., Ducor Telephone Company, Evans Telephone Company, Foresthill Telephone Co., Happy Valley Telephone Company, Hornitos Telephone Company, Kerman Telephone Co., Pinnacles Telephone Co., The Ponderosa Telephone Co., Sierra Telephone Company, The Siskiyou Telephone Company, The Volcano Telephone Company, Winterhaven Telephone Company)
13. SureWest Communications
14. The Utility Reform Network
15. Verizon California Inc.
16. WorldCom, Inc.

# Appendix 2

CAIRS and 2-1-1 Statewide Steering Committee

Proposals for 2-1-1 Implementation

**Carrier Solution:** The Carrier Solution envisions a turn key a network in which a 2-1-1 call would be translated at a local exchange carrier switch to an 8YY number. The 2-1-1 call would then be routed to a carrier network office. The carrier network office would recognize the 8YY translation and route a call based on its county of origin to the appropriate information and referral provider designated to provide 2-1-1 service. The carrier's network office or "cloud" would perform all intelligent network functions, such as interactive voice response ("IVR"). The information and referral provider designated to provide 2-1-1 service within a particular county would contract with the carrier to terminate 2-1-1 calls via the 8YY number.

**RTC Solution (8YY):** The Regional Technical Center ("RTC") 8YY solution envisions a network in which a 2-1-1 call would be translated at a local exchange carrier switch to an 8YY number. The 2-1-1 call would then be routed to an RTC—effectively, an intelligent Private Branch Exchange. The RTC would recognize the 8YY translation and route a call based on its county of origin to the appropriate information and referral provider designated to provide 2-1-1 service. The RTC would perform all intelligent network functions such as IVR. The information and referral provider designated to provide 2-1-1 service would support the maintenance and operation of an RTC.

**RTC Solution (8YY and 7 or 1+10 digit solution):** The RTC 8YY and 7 or 1+10 digit solution envisions a network in which a 2-1-1 call would be translated at a local exchange carrier switch to an 8YY number in the instance in which the call would constitute an interLATA or intraLATA toll call and would be translated to a 7 or 1+10 digit number in the instance in which the call could be completed within a local calling area. The RTC would recognize the 8YY or the 7 or 1+10 digit translation and route a call based on its county of origin to the appropriate information and referral provider designated to

provide 2-1-1 service. The RTC would perform all intelligent network functions such as IVR. The information and referral provider designated to provide 2-1-1 service would support the maintenance and operation of an RTC.